

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested. Claims 1-41 are pending, Claims 1, 14, and 24 are amended, and Claims 40 and 41 are added by way of the present amendment.

In the outstanding Office Action, Claims 1, 2, 4, 8-10, 14, 15, 17, 20, 24, 25, 28, 33, and 35-37 were rejected as anticipated by Peterson et al. (U.S. Patent Application Publication No. 20040014250, hereinafter “Peterson”); Claims 3, 6, 7, 11, 16, 19, 21, 26, 27, and 32 were rejected as being unpatentable over Peterson in view of Usui et al. (U.S. Patent Application Publication No. 20040040658, hereinafter “Usui”); and Claims 5, 12, 13, 18, 23, 29-31, 34, 38, and 39 were rejected as being unpatentable over Peterson in view of Sui et al. (U.S. Patent No. 6,559,942, hereinafter “Sui”).

Initially, applicants and applicants’ representative thank Primary Examiner Tsai and Examiner Kim for the interview held on July 20, 2005 to discuss the present case. During the interview, differences between the claimed invention and the cited references were discussed in detail, and amendments as submitted herein were discussed to clarify the discussed differences. The Examiners agreed that the amended claims overcome the rejections of record.

With regard to the rejection of Claim 1 as anticipated by Peterson, that rejection is respectfully traversed.

Amended Claim 1 recites a system for monitoring component consumption, comprising:

a radiation source configured to emit a radiation beam onto a first area of a consumable component subject to erosion by a manufacturing process, the component having an initial thickness such that the component can withstand a plurality of process runs before the erosion requires replacement of the component;

a detecting unit configured to detect a portion of the radiation beam that is refracted by the component, and to

generate a radiation level signal based at least on a strength of the detected portion of the radiation beam; and
a control unit configured to determine a replacement status of the component based on said radiation level signal.

In contrast, Peterson describes a method and apparatus for determining the thickness of a layer during manufacture of an integrated device.¹ The apparatus determines the thickness and composition of layer 106 deposited on substrate 104.² Thus, it is respectfully submitted that Peterson does not teach “a radiation source configured to emit a radiation beam onto a first area of a *consumable component*,” as recited in amended Claim 1. Further, as layer 106 is not being consumed, it does not need to be replaced. Thus, it is respectfully submitted that Peterson does not teach “a control unit configured to determine *a replacement status* of the component” either. As Peterson does not teach each and every element of Claim 1, Claim 1 is not anticipated by Peterson and is patentable thereover.

Further, it is respectfully submitted that Usui and Sui do not cure the above mentioned deficiencies of Peterson, as neither Usui nor Sui teach or suggest a radiation source configured to emit a radiation beam onto a first area of a consumable component, or a control unit configured to determine a replacement status of the component. Accordingly, Claim 1 (and Claims 2-13 dependent therefrom) are believed to be patentable over any combination of Peterson, Usui, and Sui.

For substantially similar reasons, it is respectfully submitted that amended Claims 14 and 24 also patentably define over Peterson, Usui, and Sui, as well as Claims 15-23 and 25-39 which depend therefrom.

With regard to new Claims 40 and 41, Claim 40 recites in part, “a control unit configured to determine the initial thickness of the first recessed portion based on the first radiation level signal, determine the initial thickness of the second recessed portion based on

¹See Peterson, paragraph 10.

²See Peterson, paragraph 25.

the second radiation level signal, and identify at least one of a material, a manufacturer, a serial number, and a type of the component based at least on determined initial thicknesses of the first recessed portion and the second recessed portion.”

As all of Peterson, Usui, and Sui describe measuring thicknesses of layers grown on substrates, it is respectfully submitted that none of the cited references describe determining an initial thickness of anything, as the initial thickness of a layer being grown is zero. Thus, none of a material, a manufacturer, a serial number, or a type of the component could be identified based at least on the determined initial thicknesses of any portion of the layers being measured in the cited references. Accordingly, as none of Peterson, Usui, or Sui teach or suggest “a control unit” as recited in Claim 40, new Claim 40 is believed to be patentable over the cited references.

Similarly, Claim 41 recites in part “determining an initial thickness of the component based on said radiation level signal” and “identifying at least one of a material, a manufacturer, a serial number, and a type of the component based at least on the initial thickness of the component.” As discussed above, none of the cited references teach or suggest determining an initial thickness of a component. Accordingly, none of the references teach or suggest the “determining” or “identifying” elements of new Claim 41. Thus, Claim 41 is also believed to be patentable.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-41 patentably distinguishes over the cited art. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of this application is therefore respectfully requested.

Respectfully submitted,

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